

REMARKS

The claims presently active in this application include claims 1 – 9, and 11. Claims 1- 6, 9 and 11 stand rejected under 35 USC 103 as unpatentable over Stoeckl (U.S. 5,300,926) in view of Fricker (U.S. 2001/0013855). Claim 8 stands rejected under 35 USC 103 as unpatentable over Stoeckl in view of Fricker and further in view of Lordo (U.S. 5,558,371). Claim 7 stands allowable.

The present invention comprises a dental apparatus including a dental device, such as an instrument table, a graphic display (i.e. a screen) and a user interface for controlling functions of the dental device. According to the invention, a touch pad is utilized as the user interface which controls functions of the dental device. A user interface in the form of a touch pad is easy to clean and disinfect between treatments or even during a treatment. A touch pad is more hygienic to use than e.g. conventional keyboards and a user can wear protective gloves and still operate the touch pad thereby providing further safety against infection.

Moreover, it is noteworthy that, according to claim 1, the touch pad is arranged separate from the graphic display and to control the movement of a cursor on said separate graphic display (on which symbols describing the functions of the dental device are shown). These features, which are neither taught nor suggested in the context of any prior art dental apparatus, also give rise to important advantages. The combination of the cursor functionality of the touch pad, the inherent fact that the user does not necessarily have to be able to see the contact surface of a touch pad to operate the touch pad, and the arrangement of the touch pad to be separate from the graphic display so that it can be freely positioned regardless of the location of the graphic display, enables the user to control the dental device from practically anywhere in the vicinity of the apparatus. For example, the touch pad can be situated out of the sight of the user, such as

under a backrest of a patient chair, (see. e.g. claim 9) and the user can still control functions of the dental device by operating the touch pad and via it control the cursor on the graphic display. Further, contrary to e.g. the touch screen keyboard arrangement taught by Stoeckl to be discussed below, the same user interface can be easily arranged to control not only functions of the dental apparatus but also a computer typically being arranged in the treatment room of dental clinics.

**The Rejection of Claims 1-6 and 9-11
Under 35 USC 103(a) Over Stoeckl In View of Fricker**

The examiner takes the position that a touch screen keyboard of Stoeckl constitutes the claimed user interface of claim 1 and refers to function “display elements” as constituting the claimed graphic display. The examiner recognizes that Stoeckl does not disclose that the user interface is a touch pad, but takes the position that it would have been obvious “to implement the digital system comprising a touch pad as taught by Fricker et al. into the dental apparatus having a graphic display of Stoeckl....” Fricker discloses a construction of a resistive and capacitive touch pad for digital systems “such as personal computers, games, hand held personal organizers, and the like.” However, it is respectfully submitted that the combination of teachings proposed by the examiner is an improper hindsight reconstruction of the prior art made solely in the light of applicant’s disclosure and, moreover, even if the teachings of Stoeckl and Fricker were combined as suggested, the invention defined by the claims as amended still would not be obtained.

In order to properly combine the teachings of two prior art references, there should be a reason that would have prompted a person of ordinary skill to combine the elements as the invention does. See KSR International, Co. v. Teleflex, Inc., 550 U.S. 398, 127 S. Ct. 1727 (“A patent composed of several elements is not proved obvious merely by demonstrating that each

element was, independently, known in the prior art. Although common sense directs caution as to a patent application claiming as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the art to combine the elements as the new invention does. Inventions usually rely upon building blocks long since uncovered, and claimed discoveries almost necessarily will be combinations of what, in some sense, is already known.”) Here, a “touch screen (keyboard)” is not “touch pad”. These two are separate and distinct terms of art with well-known definitions. A touch screen (keyboard) is a device historically designed to replace mechanical keyboards and as such uses “keys” which are pressed and correspond to specific functions. Touch screen keyboards like those disclosed by Stoeckl, in contrast to touch pads, have no cursor functionality. One skilled in the art understands a “touch screen (keyboard)” to be a surface on which or through which symbols much like keys of a keyboard are arranged visible, which symbols may be pressed to make a desired selection. A touch pad as claimed herein, however, is a device physically separate from any screen and it is arranged to enable the user to move and operate a cursor displayed on a screen via a pointer means so that functions of the dental apparatus may be controlled in response to such actions, i.e. *in response to a touch of a pointer means and its movement on the surface of the touch pad.*

There is simply no reason to substitute one user interface for another one that functions in a completely different manner for a different purpose. The significant benefits provided by the use of a touch pad comprising e.g. the claimed feature of the touch pad being arranged to control a cursor by both pressing on the contact surface of the touch pad and by sliding on it in an arrangement according to claim 1 are nowhere suggested in any of the prior art references. Further, as will be explained in more detail below, when the device of Stoeckl which is arranged

to control the dental apparatus is a foot controller, not a touch screen keyboard, it is not seen how one could arrive at the invention as claimed herein based on the arrangement of Stoeckl. On the other hand, operation of a touch pad in accordance with the invention moves a cursor displayed on the screen. The examiner takes a position that such a substitution would be obvious "because this would provide capacitive sensor will (sic) the presence of a finger, but will not detect the presence of a pen (see Stoeckl, see 0052.)" While it is not exactly clear to what the examiner refers in this connection, first, there is no restriction of the "pointer means" in claim 1 to either a finger or a pen. Moreover, there does not appear to be any suggestion in Stoeckl of any benefit to be derived from utilizing a user interface that does not detect the presence of a pen. Accordingly, it is respectfully submitted that the combination of teachings proposed by the examiner is not proper.

Even if the Stoeckl arrangement were modified as proposed, the arrangement specified in claim 1 still would not be obtained. First, considering the matter more generally, should one replace the touch screen keyboard of Stoeckl by a touch pad, one still would not arrive at an arrangement in which functions of the dental apparatus are controlled by a touch pad, as Stoeckl teaches the foot controller being the sole device which controls functions of the dental apparatus. Further, claim 1 includes a feature of controlling and moving a cursor, while the touch screen keyboard of Stoeckl is specifically designed to be used together with the related electronics and software of a dental apparatus and thus lacks the basic functionalities which using the touch pad / screen / cursor combination brings along. Nothing of this sort can be found from Stoeckl, and even if one were to consider that the touch screen keyboard of Stoeckl would somehow be replaced by some touch pad arrangement, one still would not arrive at the claimed invention as also in that case the touch pad would only be used, for the most, for selecting the operational

status of the foot controller in the same way as the touch screen keyboard according to Stoeckl, not for controlling functions of the dental apparatus .

Stoeckl discloses a dental apparatus in which operation of the dental apparatus is controlled by a foot controller. The operational status of the foot controller may be visually shown in a “visual field”. In a first embodiment, a visual field of Stoeckl that indicates the status of the foot controller is analog in the sense that LEDs are arranged in connection with various symbols. These LEDs are arranged to indicate the operational status of the foot controller, i.e. to indicate or suggest to the operator of the dental apparatus what will happen e.g. when the foot controller is tilted. The LEDS arranged on the visual fields are not control devices or a user interface. The dental device is controlled by the foot controller whether the user observes the visual field(s) or not. In a second embodiment, the visual fields are digital in that they are shown on a computer screen. But, the very same symbols that are used in the first embodiment are shown on a computer screen and digital lights for which a term picture screen cursor is used, are used, which, like the LEDs of the first embodiment, function solely to indicate the operational status of the foot controller. There is no “movement” of a cursor (as controlled by sliding movement on a contact surface) and there are only a few discrete places where these digital lights can be turned on. Moreover, lighting of these digital lights is not accomplished by any movement on any surface, or by pressing anything on the surface of the screen, but through the use of the foot controller. In a third embodiment, keys or a keyboard is arranged on top of a visual field. In this embodiment, one is able to manually press symbols shown on the visual field. Such pressing of symbols, however, does not constitute controlling functions of the dental device as the only actual effect of such pressing is selection of the operational status of the foot controller. In other words, even in this third embodiment, controlling functions of the dental

device is accomplished by the foot controller, not by any keys arranged to be manually pressed (note that also Stoeckl himself uses a term “info block” for his visual fields, not e.g. a “control block”) and, as discussed above, there is no moving and controlling a cursor in response to a touch of a pointer means and its movement on any surface of the touch pad, whereupon the cursor would be arranged to be controlled by both pressing on the contact surface of the touch pad and by sliding on it, as claimed herein.

Still further, as pointed out above, claim 1 specifies that the touch pad is arranged separately from the graphic display so that the cursor functionality of the touch pad and the fact that a user need not be able to see the touch pad in order to control functions of the dental device, all combine to enable the graphic display to be independently positioned from the touch pad and enable the touch pad to be positioned at any location regardless of the position of the graphic display to enable a user to control the dental device from practically anywhere in the vicinity of the dental apparatus. This is obviously not possible with the touch screen keyboard arrangement Stoeckl teaches, and the whole core of Stoeckl’s invention is related to the **visual field** arranged in connection with the apparatus for the operator to see, in order to be able to keep track what one is about to do with the single actuation device of the apparatus, the foot controller. A touch pad also allows more versatility than Stoeckl’s keyboard or soft key arrangement, which is limited to its “keys” while a touch pad may be used to control many different applications using the cursor functionality. As noted, Stoeckl fails to disclose means for controlling the cursor in response to a touch of a pointed means and its movement on a surface of the touch pad as defined in claim 1.

Furthermore, it is not only the issue of being able to place the touch pad in places where one cannot see the touch pad, the ergonomics aspect is not limited to that: when using touch

screen keyboard, it must be placed somewhere one can both see and reach, i.e. one cannot necessarily place the screen to a location which would be suitable for viewing, e.g. on the other side of the patient chair, because in that case one would always have to reach over the patient to be able to press a key. When using a separate touch pad and screen on which a cursor controlled by the touch pad is shown, both the touch pad and the screen can be placed wherever one feels is the best. The touch pad (which can be small as compared to a screen) can be placed almost anywhere one can easily reach when performing dental care operations, as the seeing-aspect is taken care of by the linked operation of the touch pad and the cursor to be shown on the screen, whereas in the case of one using Stoeckl's visual field and a keyboard integrated therewith, they must always be placed somewhere in sight, which consequently may bring along the problem of not being able to reach the keyboard from the location where the actual dental care operations are performed. In view of the foregoing, it is respectfully submitted that claim 1 is allowable.

Claims 2-6 and 8, 9 and 11 all depend from claim 1 and as such include the various limitations thereof. Accordingly, for the same reasons as advanced above in connection with claim 1, these claims should be allowable.

With specific regard to claim 2, this also requires the functional connection between the touch pad and the graphic display to be through a computer. The examiner refers to col. 8, lines 24-30 of Stoeckl. However, it is not seen where this passage suggests that signals from soft keys travel to a picture screen through a computer. A mere existence of a screen does not necessitate existence of a computer.

Claims 3 and 4 specify that the touch pad be arranged to control the computer functionally connected to the dental device. It is not clear where the computer is in Stoeckl to

which the examiner refers. Again, mere presence of a screen does not necessarily imply the presence of a computer.

Claim 9 specifies that the touch pad is integrated with the dental apparatus or situated under a backrest of a patient chair. Stoeckl is devoid of any such teaching. Indeed, Stoeckl teaches arranging a keyboard or soft keys “on the picture screen”, yet the only teaching concerning placement of any monitor 17 Stoeckl provides is one according to Fig. 1, in which the monitor is arranged on a table separate from the dental apparatus. The placement of the touch pad under the backrest of a patient chair is convenient and may take advantage of the beneficial feature of the invention that the touch pad need not be within the field of the user’s view.

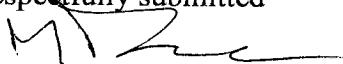
Claim 11 specifies that the touch pad is arranged to form control information for the dental device through the computer so that the control information is modified on the basis of patient information included in the computer. In order for the examiner’s argument regarding Claim 11 to make any sense Stoeckl would have to teach that the height of the dental chair is controlled differently depending on the characteristics of a patient. However, there is no such teaching in Stoeckl.

**The Rejection of Claim 8 Under 33 USC 103(a)
Over Stoeckl In View of Fricker and Lordo**

Claim 8 specifies that a detachable and disinfectable or disposable film is arranged to be attached to the contact surface of the touch pad. The examiner refers to Lordo as teaching a resuscitator apparatus comprising a detachable and disinfectable and disposable film attached to the squeeze bag. However, the proposed combination of teachings still is deficient for the reasons discussed above in connection with Claim 1.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance and early passage to issue is respectfully solicited.

Respectfully submitted



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